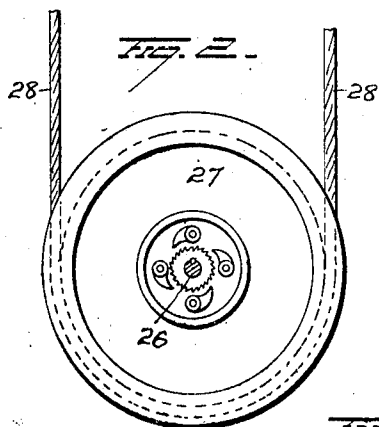
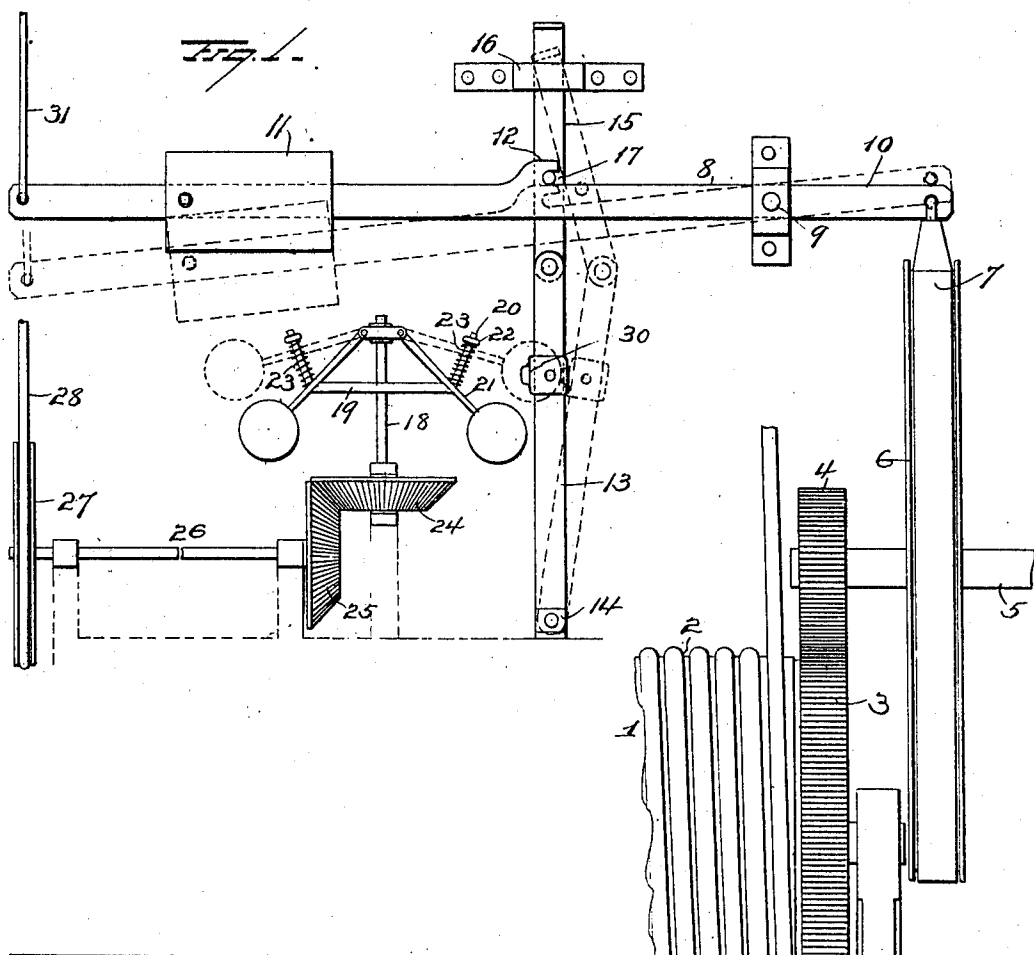


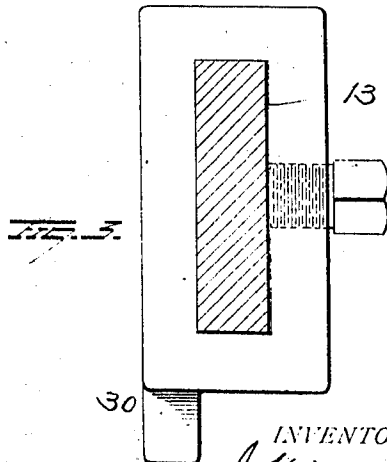
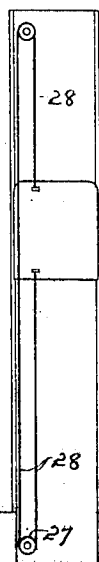
J. HILL.
BRAKE FOR ELEVATORS.
APPLICATION FILED MAR. 29, 1912.

1,039,284.

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BRAKE FOR ELEVATORS.

1,039,284.

Specification of Letters Patent.

Patented Sept. 24, 1912.

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To all whom it may concern:

Be it known that I, JOSIAH HILL, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Brakes for Elevators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in brakes and more particularly to an improved emergency brake adaptable for use with elevators,—the object of the invention being to provide simple and efficient means for automatically effecting the application of a brake to the operating mechanism of an elevator when the car descends at an abnormal speed.

With this object in view, the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating the application of my improvements, and Figs. 2, 3 and 4 are detail views.

1 represents the motor drum over which the cable 2 of an elevator passes and by means of which the elevator car is operated. The motor drum 1 is provided with a gear 3 which transmits motion to a pinion 4 on a counter-shaft 5 and to this counter-shaft a brake wheel 6 is secured for the reception of a suitable brake-band 7. A lever 8 is pivotally supported near one end in a bracket 9 and the short arm 10 of this lever is connected with the brake-band 7 for operating the latter. A weight 11 is mounted on the long arm of the lever 8 and between this weight and the pivotal support of the lever, the latter is provided with a hook 12. An upright lever 13 is pivotally attached at its lower end to a suitable bracket 14 and with the upper end of said lever an arm or lever 15 is pivotally connected and guided through a bracket 16 located above the lever 8. The arm or lever 15 is provided with a pin 17 which, when the levers 13 and 15 are in vertical alinement with each other, engages the hook 12 on the horizontal lever 8 as shown in full lines in Fig. 1. When the pin 17 thus engages the hook 12, the hori-

zontal lever will be locked in its normal position and the brake-band 7 will be released from the brake-wheel 6. The levers 13-15 constitute a toggle which, when broken and moved to the position shown in dotted lines in Fig. 1, will release the horizontal lever 8 and permit the weight 11 to actuate said lever, turning it on its pivotal support 9 and causing the application of the brake-band 7 to the brake-wheel 6 to promptly check the operation of the driving drum 1.

For the purpose of automatically braking the toggle and causing it to assume the position shown in dotted lines, the devices now to be described will be employed. A shaft 18 (mounted in suitable bearings) is provided between its ends with a cross-bar 19 and to this cross-bar pins 20 are connected and pass through the pivoted arms 21 of a centrifugal governor. Collars 22 are secured to the pins 20 and between said collars and the arms 21, springs 23 are located. It is apparent that by adjusting the collar 22 on the pins 20, the tension of the springs 23 and the outward movement of the governor arms can be controlled. The shaft 18 has secured thereto a bevel gear 24 which receives motion from a bevel gear 25 secured to a shaft 26. A pulley 27 is mounted on the shaft 26 and is connected with the latter through the medium of ratchet devices so that rotation in one direction only of said pulley will impart motion to the governor. Motion is transmitted to the pulley 27 by means of a cable 28 which passes over a pulley at the upper end of the elevator shaft and is connected with the car. When, in the descent of the car, the latter acquires an abnormal speed, motion will be imparted to the centrifugal governor which will cause the arms 21 of the latter to move upwardly and outwardly toward the positions shown in dotted lines, Fig. 1. It will be observed that the toggle formed by the levers 13-15 will be in the path of movement of the governor arms, as above described, and in order that the weighted ends of these arms shall engage the toggle and break the same to move the members thereof to the positions shown in dotted lines, the lower lever 13 of the toggle is provided with a transversely disposed block or shoe 30 to be engaged by the weighted ends of said governor arms.

For the purpose of raising the weighted lever 8 and releasing the brake, especially

when said brake has been applied when the elevator car is between floors, a rope or cable 31 is attached to said lever and passes through the car of the elevator and from end to end of the elevator shaft.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:

1. The combination with a brake wheel and a brake band, of a lever pivoted between its ends and having one arm connected with said brake-band and provided on its other arm with a weight, two vertically disposed levers pivotally connected together and one of said vertical levers pivoted to a fixed support, a guide for the other of said vertical levers, a pin on one vertical lever to engage the weighted lever and sustain the latter normally elevated and means for striking one of said vertical levers to release the pin on the other of said vertical levers from engagement with the weighted lever.
2. The combination with a brake-wheel

and a brake-band, of a horizontal lever pivotally supported between its ends and having one arm connected with the brake-band, a weight on the other arm of said lever, a hook projecting from one arm of said lever, vertically disposed toggle levers, a pin on one of said toggle levers to engage said hook and normally sustain the weighted lever in an elevated position to release the brake-band, a centrifugal governor in position to strike one of said toggle levers and break the joint between the latter to release the weighted lever, means for adjusting said governor, and means for imparting rotation in one direction to said governor.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

JOSIAH HILL.

Witnesses:

STELLA M. MILLER,
A. F. MILLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."